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Abstract

This final repcrt cf the Mississippi Research Ccordinating Unit (RCU) for Vccational and Technical Educaticn summarizes activities during the period June 1, 1965 to August 31, 1969. The purposes of the RCU in stimulating, coordinating, implementing, and disseminating educaticnal research are illustrated by listings of research prcposals, research projects, and narrative discussicns. A bibliography of 40 RCU related publications and a statement of the furcticns cf the RCU are appended. (CH)

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FINAL REPORT

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THE MISSISSIPPI RESEARCH COORDINATING UNIT FOR VOCATIONAL AND TECHNICAL EDUCATION

James E. Wall and James F. Shill

Social Science Research Center
Mississippi State University
State College, Mississippi 39762

September, 1969

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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by

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The educational research and development activities reported herein were performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

U. S. DEPARTMENT OF
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I. INTRODUCTORY SECTION

A. Summary

The Mississippi Research Coordinating Unit for Vocational-Technical Education (RCU) was approved and funded in June, 1965, under the provisions of the Vocational Education Act of 1963, P.L. 88-210, Section 4 (c). The initial period (22 months) of operations began June 1, 1965, and extended through March 31, 1967. The second period (18 months) began April 1, 1967, and extended through September 30, 1968. The final period of operation under P.L. 88-210 began October 1, 1968, and extended through August 31, 1969. The Mississippi RCU has been approved to continue operations under the provisions of the Vocational Education Amendments of 1968, Title 1, Part C.

The Mississippi RCU is jointly sponsored by two agencies: (1) the State Division of Vocational and Technical Education of the Mississippi State Department of Education; and (2) the Social Science Research Center of Mississippi State University. The RCU is headquartered in the Social Science Research Center on the campus of Mississippi State University. Most of its staff members are located on the MSU campus and one member is in the State Division Office in Jackson.

In one form or another the RCU has rendered service to and received service from all aspects of vocational education in the State, the Mississippi Employment Security Commission, the Mississippi Economic Council, local school districts, junior and senior colleges and universities, vocational teacher education departments, and the Curriculum Coordinating Unit for Vocational-Technical Education.

The RCU established its purposes and its research and development priorities through consultations with educational, agricultural, business, industrial, and community leaders, as well as with the two committees which advise it. During the coming period the RCU will initiate periodic project review meetings designed to critically assess progress and gain new direction. It will continue to evaluate and improve its research and development program by using the same techniques, persons, and agencies which have proven worthwhile in the past.

B. INTRODUCTION

This document is the final report of the activities of the Mississippi RCU under P.L. 88-210. According to the SPECIAL INSTRUCTIONS section of the GRANT PAYMENT, REPORT AND SUPPLEMENTARY SCHEDULE, which accompanied the NOTIFICATION OF GRANT AWARD, this final report summarizes the period of operation from the date of establishment up to the effective date of August 31, 1969. Consequently, this report covers all of the RCU activities from its inception on June 1, 1965, to August 31, 1969, or a period of 51 consecutive months of operation.

The request for establishment of the Mississippi RCU was initiated early in 1965 by the State Division of Vocational and Technical Education in the Mississippi State Department of Education. Following approval of the request the RCU was located in the Social Science Research Center of Mississippi State University. The Mississippi RCU, therefore, is jointly sponsored by these two agencies. Efforts were begun early to establish purposes and operating guidelines for the RCU. Purposes and operating guidelines ultimately adopted were based on: (1) the broad objectives set forth for RCU's in the first national meeting of state RCU directors held in July, 1965; (2) the results of lengthy discussions with consultants from various disciplines; (3) the discussions with two in-state advisory committees, and various organizations, agencies, and individuals; and (4) the observations made and information received during attendance to national and regional seminars and conferences. These early efforts resulted in the adoption of four general purposes which govern most of the RCU activities and operations. These purposes are:

Purpose No. 1: To stimulate persons in Mississippi to conduct research in vocational and technical education and in directly related disciplines such as sociology, psychology, economics, other phases of education, and similar areas. The RCU has placed itself in a service position to provide technical, consultative assistance and encouragement, upon request, in planning, funding, and conducting such research.

Purpose No. 2: To coordinate vocational and technical education research in Mississippi in order to avoid overlap and duplication, to encourage replication of research where deemed advisable, and to achieve maximum efficiency in research efforts. The RCU has provided leadership in identifying and establishing priorities for vocational and technical education research.

Purpose No. 3: To implement research projects under the direct supervision of the various members of the RCU staff. A number of areas have been identified in which an urgent need for research is indicated.

Purpose No. 4: To disseminate research information that has been derived within the state and that which has been obtained from regional and national sources. The RCU also has acted as a clearinghouse for research reports that are sent to such agencies as the Educational Resources Information Center, other RCU's, etc.

C. METHOD

1. Direction

Various means were utilized to accomplish the purposes as set forth for this project. First, two advisory committees were established. One of these committees was entitled the Mississippi State University Committee for Vocational-Technical Education Research. Membership on this committee was composed of administrative department heads, deans, directors, coordinators, vice-presidents, and other officials who represented a cross-section of interests located on the Mississippi State University campus. The second committee was entitled the Mississippi State Committee for Vocational-Technical Education Research. As a statewide committee, membership on it was composed of the state director and research coordinator of the Division of Vocational and Technical Education of the Mississippi Department of Education. Additional members on this committee were vocational teacher-educators and other persons from the institutions of higher education in the State who have interests in vocational and technical education research. Represented on this committee also were persons from the Mississippi Employment Security Commission. It has been suggested that membership on this committee be increased to include representatives from agriculture, industry, business, and various state government agencies such as the Mississippi State Research & Development Center, etc.

In each meeting the committee members were brought up to date as to RCU activities. Also during these meetings items were considered, such as: (1) the national program of development of quality vocational-technical education research; (2) immediate and long-term problems in vocational and technical education in Mississippi; (3) priorities for research; (4) identification of researchers; (5) planning, and conducting research; (6) drafting proposals; and (7) financing and supporting projects.

2. Contacts with Other Agencies

Frequent contacts were made with agencies in the State, such as the Division of Research in the State Department of Education; the seventeen junior colleges; all of the high schools and institutions having vocational programs; certain correctional institutions; and various agricultural, business, industrial, and economic agencies and entities. The Mississippi Employment Security Commission has been of great assistance in the conduct of the RCU activities. Frequent contacts were made with various agencies and departments in the institutions of higher learning in the State. Cooperative work in job projections has been initiated with the Mississippi Research and Development Center and the Mississippi Employment Security Commission.

3. Location

The Mississippi RCU is physically located in the Social Science Research Center (SSRC) of the Mississippi State University. It is adminis-

tered as a part of the SSRC program of research in OCCUPATIONAL EDUCATION AND MANPOWER DEVELOPMENT. As a jointly sponsored project between the State Division of Vocational and Technical Education and the SSRC, the RCU enjoys extraordinarily close working relationships not only with the Division, but with other educational departments and agencies as well. It likewise enjoys with other local, state, and federal governemtal and nongovernmental agencies a rapport which has been developed by the Division over a period of years.

4. Evaluation

Evaluation of the Mississippi RCU has been and will in the future be a continuous process. Reviews and suggestions have been frequently made by other staff members of the SSRC. The two advisory committees also have served in an evaluative capacity. State, regional, and federal-level personnel frequently have aided in evaluating the effectiveness of the RCU, mainly through personal contact and consultation.

5. Staff Positions of the Mississippi RCU

a. Director:
Dr. James E. Wall (8/17/65--to present)

b. Research Coordinator of the St.Div. of Vo-Tech.Ed.(Jackson)
Mr. A. G. Shepherd, Jr. (7/1/64--4/30/69)
Mr. J. H. McMinn (5/1/69--to present)

c. Associate Director
Dr. Arthur R. Jones, Jr. (6/1/66--5/31/67)
Dr. James F. Shill (6/1/67--to present)

d. Research Assistants -- $\frac{1}{2}$ time
Mr. John S. Rankin (9/1/65--8/31/67)
Mr. Willard Handley (9/1/67--2/28/68)
Mr. Robert Pester (3/1/68--8/31/68)
Mrs. Shirley Alcantara (3/1/68--to present)
Mr. James Duncan (9/1/68--2/1/69)
Mr. Allen T. Steed (8/1/69 to present)

The activities of the RCU have been greatly enhanced through the services of other SSRC senior-level staff members; namely, Dr. H.F. Kaufman, Project Director; Dr. K. P. Wilkinson, SSRC Director; Mr. A.W. Baird, Project Director; and the secretarial and clerical members of the staff.

6. Consultants

During the operation of the RCU, several persons have provided a variety of consultative services, such as offering and elaborating upon theoretical ideas; content of focused studies, both longitudinal as well as short-term research; and inspiration, motivation, and direction for RCU purpose and goal establishment and achievement. The following specialists aided greatly in facilitating the work of the RCU:

Dr. C. Arnold Anderson, University of Chicago, Sociologist
Dr. Virgil Christensen, Texas A & M, Vocational Educationist and Researcher
Dr. John Coster, North Carolina State University, Vocational Educationist & Researcher
Dr. June Cozine, Oklahoma State University, Home Economics Teacher Educator & Researcher
Dr. Herbert M. Hamlin, North Carolina State University, Educationist & Researcher (Deceased)
Dr. Duane M. Nielsen, U.S.O.E., Vocational Educationist & Administrator
Dr. Guy E. Timmons, Michigan State University, Vocational Teacher Educator
Dr. Harold M. Byram, Michigan State University, Vocational Teacher Educator & Researcher
Dr. Walter M. Slocum, Washington State University, Sociologist

II. FINDINGS AND ANALYSIS

Much effort was directed toward developing and fulfilling the purposes of the Mississippi RCU. Shown below are the specific purposes and the various activities which contributed to the attainment of each.

A. RCU Purpose No. 1--To stimulate research.

In this connection the RCU has assisted, or is currently assisting in the formulation of research-study proposals for the following:

1. A Comparative Analysis of Electronic Content in Public Post-High School Technical Institutes and Electronic Technology Requirements of Industry. This was a study conducted throughout six southern states on the electronic needs of industry and what public post-high school technical institutes are offering in their curriculums. Funded as a small grant by the U.S.O.E. in the amount of $9,500, it was completed in June, 1967. A doctoral dissertation was completed as a result of the conduct of this project. Findings indicated that electronics instructors placed significantly more emphasis on basic electronic content than what industrial personnel thought was necessary. It was concluded that a customized approach to technical training ranging from 1 to 3 years would reduce the dropout rate, encourage more students to enter the technical field, and better meet the demands of industry whose technical needs range from the relatively simple to the complex.*

2. Five Pilot Projects in Wage Earning in Home Economics in Mississippi (1965-66). Following a statewide conference on wage earning in home economics in the fall of 1965, five pilot projects were started in various parts of the State for training adult females in clothing services, food services, and child-care services. Curriculum materials were developed in these subject areas. The pilot projects indicated that this type of program must be flexible to meet the needs of the participants and that skills acquired would help enrollees find employment or up-grade their present employment status. The pilot projects gave direction for planning future programs in wage earning occupations for secondary school programs, programs for dropouts, and adult programs. These pilot projects were reported in a publication released by the RCU.*

3. Development and Use of Subject Matter Materials for Vocational Education in Agriculture. This project was conducted among the vocational agriculture teachers in Mississippi and completed in June, 1967.

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*See Appendix A: RCU Bibliography

Respondents indicated that too few copies of references were available to meet class needs and that supplemental materials were generally lacking in their instructional programs. No preference was shown for publication size. Respondents indicated greatest need for new references in the following instructional areas: (1) pastures; (2) economic principles of farm management; (3) economic principles of agribusiness; (4) agricultural mechanics; and (5) career opportunities in agricultural occupations. A final report and a doctoral dissertation were completed on this project.*

4. Self-Appraisal of Vocational-Technical Education in Mississippi by Local School Committees and Instructors. This study was comprehensive in that all vocational-technical programs in the state were included and all the vocational teachers participated. The study involved three phases. First, each vocational teacher in the State rated his or her own program; second, a committee composed of the school administrator, the school guidance counselor, and a representative teacher from each type of vocational program in the school also rated the vocational programs in that school; third, a sample of the approximately 450 schools in the State which have vocational education programs was to have been selected and their programs rated by a validation committee appointed by the State Director of Vocational-Technical Education.

Representatives of the schools were called together for meetings held throughout the State, in which the objectives and procedures for this study were explained. Verbal and written reports in the form of letters from teachers and administrators indicated that this study was relatively well received, and that it had caused some individuals to do some "soul-searching," or contemplation concerning their respective programs.

Some of the findings of this study were: (a) In general, administrators significantly ranked all general aspects of vocational programs higher than instructors. (b) In general, the analysis has shown that instructors and administrators in urban school organizations ranked program aspects higher than did administrators and instructors in rural schools. Administrators and instructors in predominantly white schools ranked program aspects higher than those in predominantly Negro schools. (c) A significant pattern of concordance exists between administrators and instructors. That is, although administrators ranked items higher than instructors, the rank order of items as perceived by instructors is essentially the same as the rank order based on views of administrators. Two major exceptions, however, involve some items related to how each set of respondents saw physical facilities, instructors of programs, and students. Clearly, in some instances, administrators and teachers see the same item in quite dissimilar ways, calling attention to the unmistakable need for better communication between them. A final report was completed on this project.*

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*See Appendix A: RCU Bibliography

5. Social Origins and Career Patterns of Vocational Educators: A Study in Occupational Mobility. Respondents were drawn from three areas of specialization (vocational agriculture, trade and industrial, and technical education teachers) in vocational-technical education in Mississippi. Vocational-technical education was confirmed to be a unique channel to white-collar professions for persons of lower social origin, in that: (1) practitioners were found to be recruited predominantly from agricultural and manual origins; (2) most practitioners were upwardly mobile relative to their fathers' occupational positions; and (3) the practitioners exhibited more than twice as much mobility to white-collar professions than their brothers. Upward mobility was found to be directly associated with family size, and younger brothers were found to be more mobile to white-collar professions than were older brothers. Findings of this study were reported in a thesis.*

6. The Occupational Aspirations of Rural and Urban Low-Income Negro Heads of Households. Socioeconomic data were gathered in a random sample of Negro household heads associated with public welfare programs. Negro household heads, regardless of sex and rural-urban place of residence, were found to aspire to occupational status higher than the one currently occupied, and they aspire for their sons to enter occupational statuses even higher than the one to which they themselves desire. In contrast, their expectations as to what their sons will achieve are relatively close to the current occupational statuses of the Negro household heads. Statistically significant associations were found for occupational aspirations and sex, place of residence, age, education (for urban males and females only), and employment statuses (for urban females only). No statistically significant patterns were discovered between current occupational status, level of living, community identification, social participation, anomia, and occupational aspirations. The study reflects the difficulty of measuring variation of characteristics of relatively homogenous populations such as the low-income Negro groups. It was apparent that there is a need to refine the instruments used to measure variables in studies of low-income populations. Findings of this study were reported in a thesis.*

7. Occupational and Educational Aspirations and Expectations of Negro Male High School Seniors in the Mississippi Delta. Funded as a small-grant project through the regional office of U.S.O.E., this study was completed in February, 1969, under the direction of Alcorn A & M College. The study included male Negro youth in 12 predominantly Negro public high schools. Approximately 70 per cent of the respondents were from families whose annual incomes were less than $3,000.

Findings of the study tend to support the generalization that the educational aspirations of urban youth are higher than those of rural youth. Most respondents received considerable encouragement from parents toward upward educational mobility. About 29 per cent of the respondents aspired to complete four years of college. Few respondents aspired to two years of less vocational-technical education beyond high school.

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*See Appendix A: RCU Bibliography

Occupational aspirations of urban youth were higher than those of rural youth, and the aspirations were relatively high compared to existing opportunities in the labor market. The lack of valid and extensive occupational information among the respondents was revealed. Occupational preference between rural and urban seniors was not significantly different except for artistic and musical occupations.

Results of the General Aptitude Test Battery (GATB) exhibited wide rural-urban differences. On all parts of the tests administered, urban seniors scored higher than rural seniors, with the exception of "Manual Dexterity."*

8. Community Involvement and Vocational Education Program Development. Initial discussions were begun on the feasibility of developing a program of research which would focus on the relationship between the development of vocational education programs and the levels and nature of community involvement in such programs. Community involvement would be treated in terms of: (1) the extent of citizen participation at various levels of program initiation and operation; and (2) the extent of participation of program leaders in the borader framework of community structure. Expected outcomes of such research would be: (1) the explication of interactional processes and structures presently existing at various levels in vocational education program development; and (2) the delineation of factors which influence change and/or nonchange in vocational programs.

Initial discussions on this topic have been started. A proposal will be drafted for seeking funds to support the project. The research would be directed by community sociologists in the Social Science Research Center of Mississippi State University.

9. Other Activities to Achieve this Purpose. The RCU has sponsored a number of workshops, seminars, and meetings designed to stimulate research in vocational-technical education. Some of these have been general in nature, centering on such things as the establishment of research priorities which relate to more than one aspect of vocational education, and the like. Others have focused on individual projects and studies, treating in depth, for instance, the strategies, procedures, and techniques in evaluating local programs of occupational education.

In addition to the above, the RCU has worked cooperatively with the Department of Industrial and Occupational Education of Mississippi State University in the development of a graduate program leading to the doctorate in occupational education. A proposal for initiating this program has been submitted to the MSU Graduate Council for action. A graduate program of this type would be a major progressive step toward increasing the numbers of vocational education personnel who would have research design, execution, and interpretation expertise.

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*See Appendix A: RCU Bibliography

B. RCU Purpose No. 2--To coordinate research.

1. To achieve this purpose the two aforementioned advisory committees were utilized to help further identify and define problems needing research; to establish priorities for such research problems; to identify potential researchers in the state; and to define the roles and functions of the RCU and how it could act as an aid in bringing about changes in vocational and technical education within the state. During the course of many meetings among these advisory committees, the consensus seemed to evolve that some smaller ad hoc committees, charged with a highly specific duty, should be appointed for certain types of research problems. One such committee was established to review research proposals that were to be submitted for funding.

At one of these meetings information was presented on the contributions which sociology and other behavioral sciences can make in helping to solve vocational-technical education problems. It was recognized that vocational-technical education has become exceedingly complex in contemporary American society. Many factors caused this. Vocational education is complex organizationally; it has an intricately interwoven set of administrative units; its size continues to increase; and coordination of its total range of activities is becoming ever more complex.

Part of the increasing complexity has come about because administrative and operations personnel from the state to the federal level represent many diverse perspectives as to "what ought to be" in vocational-technical education. This complexity is further magnified by the problem of recruiting and retaining qualified competent personnel in vocational-technical education. This is a particularly difficult problem for Mississippi because of low salaries paid to teachers and administrative and supervisory personnel.

It was brought out during this meeting that the discipline of sociology can make contributions in various ways. For instance, in instruction, sociology can help in the communication to vocational educators of social science insights into individual behavior, community structure and process, organizational structure and process, and occupational behavior specifically. In research, sociology can help uncover important problems in its analysis of the product of vocational-technical education, which is the student; in studies of the professional vocational educator himself, for instance, the career pattern of such educators. In studies of the structure of vocational education in its community context, sociology can aid in determining the process of program implementation and conduct. In evaluation, sociology can make a particularly important contribution by focusing on a comprehensive range of factors which are related to program effectiveness, and by placing these in an appropriate and meaningful perspective, rather than just examination and evaluation of the program at the local school level. An effective program evaluation must include a wide range of factors such as community structure, organizational and administrative problems, the nature and qualifications of students, staff, supervisors, coordinators, and their functional roles.

2. RCU staff members participated in all of the annual meetings of the State Division staff during the period. Such meetings are deemed extremely important from the standpoints of information diffusion and communication. The State Division staff is continually reminded that the RCU can service it in a research and development capacity. The State Division staff members have frequently requested assistance from the RCU, especially in the form of information and data that can be used for future planning. The RCU has continually encouraged State staff personnel to undertake research projects which would yield data for statewide planning of programs.

The feasibility of initiating a computerized data/storage retrieval system for vocational information has been under study for some time. Some currently used forms of the State Division were used to construct an example of how such a system might work.* Despite the advantages of such a system, lack of funds has prevented implementation of activities connected with it. Preliminary interpretations of the 1968 Amendments to the Vocational Education Act of 1963 indicate that funds may be made available for this and similar projects. The benefits of such a system for long-range planning are immeasurable. Periodic printouts of such data would aid in plotting and analyzing trends which are absolutely essential if job projections are to be correlated with program offerings.

C. RCU Purpose No. 3--To implement research projects by RCU staff members.

1. Important Factors Concerning Human Resources in Mississippi. One of the first studies initiated by the RCU was that of compiling baseline data for vocational-technical education programs in the State. It was written expressly for the prospective researchers in the State.

Mississippi's population has remained approximately the same since 1940. Birth rates for the State have been relatively high compared to the national average, while death rates have been close to the national average. Migration losses have been depleting the young adult ages, especially among nonwhites. The population continues to change from a rural-agricultural into an urban-industrial complex.

Broad changes in the State's labor force composition have occurred. A general decline in numbers was discernible in the civilian labor force from 1940 to 1960; however, increases in the total and employed portions of the civilian labor force were reported between 1960 and 1965. The labor force is expected to continue to grow. The percentage of unemployed persons in 1965 was the lowest in 25 years and was less than the percentage of unemployed for the U. S.

In 1960 employment in industries producing physical goods--agriculture, forestry, fishing, mining, manufacturing, and construction--was 48.1 per cent of the total labor force. Service and kindred industries--

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*See Appendix A: RCU Bibliography, for a resume of Handley's work on this project.

trade, personal and business services, government, finance, and transportation--accounted for over 50 per cent of the persons in the labor force.

Paralleling national trends generally, Mississippi data show that a shift has been underway from unskilled types of occupations toward those which require higher levels of training, knowledge, skill, and education. Employment in both white-collar and blue-collar occupations has increased, especially in those occupations requiring the greatest degree of skill.*

2. Employment Opportunities and Competency Needs in Nonfarm Agricultural Occupations in Mississippi. The study presents the findings obtained in 297 interviews with owners or managers of various types of businesses which serve the agricultural industry in Mississippi. These firms service farmers' needs for production, processing, and distribution of farm commodities. Interviews were conducted in 21 of 82 counties in the State and in every major town of each of these counties. Most of the businesses in Mississippi were concentrated in the larger population areas; however, many of the firms included in the study were found in the more sparsely populated counties.

The following generalizations were drawn from the findings of this study. (1) Approximately 87 per cent of the workers in nonfarm agricultural businesses needed some agricultural competencies in varying degrees in order to successfully perform their work in the first interviewed, and approximately 93 per cent needed supporting competencies. (2) The largest numbers of employees were found in the clerical phases of the businesses. (3) Persons interviewed in the nonfarm agricultural businesses predicted that they will need to cope with the demand for a 10 to 15 per cent increase in the number of agriculturally trained employees by 1971. (4) The greatest increase in number of employees with agricultural training is expected to be in the areas of agricultural machinery and agricultural supply businesses. (5) Competencies in human relations and salesmanship are generally needed by all employees, but in varying degrees. (6) The type of business conducted by the firms that were interviewed determines the type of agricultural competencies needed by employees who work in that business. (7) Salaries and wages in some service types of employment in these nonfarm agricultural firms were comparatively low. (8) Approximately 40 per cent of the persons interviewed indicated they would prefer employees with a farm or rural background; the remaining 60 per cent had no strong preference as to background of their employees. (9) According to this study the greatest number of workers will be required in the following occupational titles in the next five years: agricultural machinery salesmen, agricultural machinery mechanics, agricultural machinery partsmen, agricultural machinery mechanics helper, agricultural supplies manager, agricultural supplies salesman, agricultural supplies mill worker, cotton ginner, greenhouse grower, nursery landscape gardener, applicator flagman, butcher, dairy processing man, and grain elevator manager.*

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*See Appendix A: RCU Bibliography

One of the outstanding findings of this study was that entry level skills varied for each occupation, but skills required to advance in any of the occupations usually always demanded some understanding and knowledge of human relations work, especially work groups. Hence, if there are commonalities among occupations, at least some of them apparently lie in the area of human relations. "Business management" as an area seemed to be another commonality.

3. Nonfarm Agricultural Occupations in Mississippi: Job-Title Profiles. This report contains specific information in profile form for each of the job titles found in the firms that were included in a study of nonfarm agricultural occupations in Mississippi. The profiles are categorized under the headings of clerical; craftsmen; professional and executive; foremen, laborers; managers, supervisors, and superintendents; operatives; and sales personnel. Specific job title profiles are found under each category. The data indicate numbers of persons presently employed; anticipated increase in employment; education levels desired and required; residential background preference; and degrees or levels of competencies required.*

4. Vocational Education Implications of High School Dropouts in a Mississippi Community. This was a discovery type of study in which basic information was sought concerning school dropout phenomena in one of Mississippi's progressive communities. The general construct for this study was one in which exploration was made of the relationships and interplay of sociological, socio-psychological, and psychological variables which influenced the dropout process. High school dropouts during a three-year period from the school were located for depth interviewing. Some 35 known dropouts, both white and nonwhite, were interviewed in depth. Additional information concerning these dropouts was gained from school records, school administrators, teachers, and counselors. A situational approach was used to analyze the data. The study has yielded insight into the establishment of hypotheses for further research in similar communities and in dissimilar communities for comparison purposes. Preliminary findings of this study have been disseminated through RCU quarterly reports. The findings of this study paralleled those found in similar studies conducted elsewhere in the United States. A few of these findings are listed here for illustrative purposes.

(a) Some of the reasons on school records given by former students for leaving school prior to graduation were superficial. They lacked specificity with regard to real reasons. The reasons given at an exit interview by former students as they left school were the results of suggestions from counselors, teachers, administrators, and school office clerks (who often were part-time students themselves) rather than real or expressed reasons given later by the dropout when he was interviewed for this study.

(b) Depth interviews with the dropouts revealed that frequently the act of actually leaving school was the culminating decision resulting from accumulating pressures. These perceived pressures stemmed from

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*See Appendix A: RCU Bibliography

incompatibility of parents, differences between student and one or both parents, feelings of alienation by the student, etc. Such familial pressures invariably had a long history which partially explained grade failures, low academic achievement levels, and similar cumulative problems of the dropout.

(c) A few of the dropouts, according to school records, exhibited I.Q.'s that were well above average. Their reasons for leaving school might be best described as role incongruency or incompatibility between what students expected of the teachers and the school, and what the teachers and the school expected of the students. Such dropouts apparently possess the ability to think, but have not been able to detect for themselves as individuals perceivable, tangible, worthwhile thoughts toward which they could direct their efforts. Evidence gathered in other areas of the U.S. about programs especially designed for dropouts and potential dropouts, indicates that vocational programs might be of benefit to these kinds of persons. The need for intensive individualized attention to each student or dropout, using sound guidance procedures, is readily apparent.

(d) One group of dropouts in this study might well have been classified as "push-outs." These dropouts were not allowed to attend school because of standing regulations. For instance, unwed pregnant girls and married girls were prohibited from attending the school. Remarkably, most dropouts in this category desired to return to school to complete high school graduation.

5. Delta Manpower Survey. This project was a cooperative venture between the Mississippi Employment Security Commission and the RCU. The purpose of the project was to generate data which would justify modification of a formula used by the U. S. Department of Labor to determine the rate of unemployment in the U.S. It is contested that the formula in use under-represents unemployment in rural agricultural areas, especially those areas with characteristics similar to the Mississippi River Delta. The objectives of this cooperative project were: (a) to survey values and aspirations of the sample respondents, (b) to determine the vocational education, experiences and aspirations of the sample and to relate these to the unemployment histories, and (c) to survey the mobility history and plans of the respondents and relate these to their feelings about themselves, about their work, and about living in the survey area. This study was complementary to a study conducted by the Mississippi Employment Security Commission in which 13,000 persons in the Delta counties of Washington, Sunflower, and Bolivar were surveyed. Of this population, 3,700 heads of households in Washington County were selected as a "working universe." A "working sample" of nearly 600 heads of households, white and nonwhite, male and female, at all age levels, was selected randomly. Two schedules were used to collect the information, a small area household schedule, and a general questionnaire to probe respondents' values, aspirations, level of living, vocational education and mobility history, and projected plans. A report of this study was forwarded to the Mississippi Employment Security Commission.*

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*See Appendix A: RCU Bibliography.

6. Educational Aspirations, Expectations, and Abilities of Rural Male High School Seniors in Mississippi. The main purpose of this study was to provide counselors and vocational educators in general, and agricultural educators in particular, with insights into the educational aspirations, expectations, and abilities of rural male high school seniors. The study also focused on related factors which influence educational aspirations, expectations, and abilities. Data were gathered principally on interview schedules administered in classrooms by vo-ag instructors and/or counselors to seniors in 33 randomly selected rural high schools throughout Mississippi. A total of 517 fully completed schedules were included in the study. Information obtained was analyzed by comparing responses categorized under two control variables of vo-ag instruction and nonvo-ag instruction. The analysis was conducted in four major phases. The first phase consisted of analyzing the educational aspirations and expectations. In the second phase, the direction of difference between the educational aspirations and expectations was analyzed. The third phase consisted of analyzing the educational abilities of the respondents. In the final phase, factors related to the educational aspiration/expectation differentials were analyzed.

Some of the more important generalizations drawn from the findings were: (1) More seniors in the nonvo-ag group than in the vo-ag group aspired to and expected to obtain bachelors' or higher degrees; (2) More vo-ag students than nonvo-ag students aspired to and expected to obtain formal training in business schools, vocational schools, or junior colleges; (3) Three times as many vo-ag seniors than nonvo-ag seniors expected to obtain no formal education beyond high school; (4) Approximately one-half of the seniors in both groups have educational aspiration/expectation differentials; (5) More seniors in the nonvo-ag group exhibited high overall grade averages and ranked higher in their classes; (6) More seniors in the vo-ag group than in the nonvo-ag group perceive their academic abilities as being low and their vocational abilities as being high; (7) More seniors in the vo-ag group group than in the nonvo-ag group were older, resided on farms, and came from larger families with low or middle incomes; (8) More parents of vo-ag seniors than of nonvo-ag seniors exhibited low levels of formal education; (9) Most seniors in both groups desired higher levels of education than their parents had attained; (10) More parents of vo-ag seniors than of nonvo-ag seniors exhibited indifferent or negative attitudes toward their sons continuing their education beyond high school; (11) More parents of nonvo-ag seniors than of vo-ag seniors wanted their sons to obtain bachelors' or higher degrees; (12) More parents of vo-ag seniors than of nonvo-ag seniors wanted their sons to attend business schools, vocational schools, or junior colleges; (13) More parents of seniors in the vo-ag group than in the nonvo-ag group did not want their sons to obtain formal education beyond high school; (14) Most seniors in both groups were influenced most in their educational aspirations by immediate members of their families; (15) More vo-ag seniors than nonvo-ag seniors were influenced in their educational aspirations by teachers; (16) More vo-ag seniors than nonvo-ag seniors would finance the major portion of their education beyond high school by working, either part-time or full-time; (17) More nonvo-ag seniors than vo-ag seniors would rely on parents or scholarships to finance the major portion of their education

beyond high school; (18) Science and mathematics seemed to have the most influence on the educational aspirations of nonvo-ag seniors; (19) Vo-ag and mathematics seemed to have the most influence on the educational aspirations of vo-ag seniors; (20) More vo-ag seniors than nonvo-ag seniors selected their educational aspiration levels in the early years of high school; (21) More vo-ag seniors than nonvo-ag seniors stated that lack of interest or lack of ability probably would be major obstacles toward reaching their educational aspiration levels.

Data in this study seem to indicate that the dominant influence in the educational aspiration/expectation level of most seniors is the immediate family. Some families tend to produce positive influences on the educational aspiration/expectation level, where others exert negative influences. Parents with below 8th-grade educational attainment apparently tend to be more satisfied with their educational level than parents with higher levels of education, according to perceptions of their sons. Generally, sons believed their parents wanted them to obtain more education than parents had received, but not much above their own. An exception was found in the group of parents who had completed high school, but who had no formal education beyond. These parents tended to have very high educational aspirations for their sons. Evidently when seniors with low levels of educational aspirations and expectations received indifferent or negative educational influences at home they turned to their peer group for encouragement. However, it was noted from individual responses in separate schools that the peers to whom the seniors turned came from families in the same educational and socioeconomic categories. The results were strikingly similar in educational level desired among students from disadvantaged backgrounds within the same school. One of the most alarming facets of this study was that many seniors with low educational aspiration and expectation levels apparently were not being influenced by the school atmosphere to aspire to some type of formal training beyond high school. Apparently the vacuums found in some home environments cannot be filled by the school. The influence of the school might be supplemented in some degree to off-set the negative family and peer influences on these individuals if vo-ag instructors and other school personnel were adequately apprised of the situation.

This study resulted in the compilation of a doctoral dissertation and a number of reports and journal articles.*

7. Follow-Up of Business Education Graduates at Mississippi State University: 1960 through 1968. This study analyzed the educational and occupational profiles of business education graduates. Findings of the study led to the following generalizations: (1) Many of the graduates were employed in teaching positions; (2) Many of the graduates were and/or had engaged in graduate study; (3) Recent graduates tend to accept non-teaching positions immediately following graduation; and (4) Generally, the respondents expressed satisfaction with their college background.*

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*See Appendix A: RCU Bibliography

8. Careers of Rural Male High School Seniors in Mississippi: A Study of Occupational Interests, Aspirations, and Expectations. The main purpose of this study was to provide vocational educators in general, and agricultural educators in particular, with insights into the occupational aspirations, expectations, and interests of rural male high school seniors. The study also focused on related factors which influence occupational aspirations, expectations, and interests. Data were gathered principally on interview schedules administered in classrooms by vo-ag instructors and/or counselors to the seniors in 33 randomly selected rural high schools throughout Mississippi. Information obtained was analyzed by comparing responses categorized under two control variables of vo-ag instruction and nonvo-ag instruction.

Some of the more important generalizations drawn from the findings were: (1) Seniors in the vo-ag group indicated highest degrees of interest in being employed in the agricultural, construction, manufacturing, and the transportation and utilities industries; (2) Seniors in the nonvo-ag group indicated highest degrees of interest in being employed in the construction, governmental, and manufacturing industries; (3) Vo-ag seniors indicated highest degrees of interest in being employed in professional, skilled, and technical occupations; whereas, nonvo-ag seniors indicated highest degrees of interest in being employed in professional, technical, skilled, and managerial occupations; (4) Many vo-ag seniors aspired to agriculture, construction, or government employment and expected employment in construction, agriculture, or manufacturing; (5) Many nonvo-ag seniors aspired to and expected employment in construction, government, or the service and miscellaneous industries; (6) Many vo-ag seniors aspired to white-collar occupations, but expected to be employed in blue-collar occupations; (7) Many nonvo-ag seniors aspired to and expected employment in white-collar occupations; (8) Older seniors exhibited higher degrees of "realism" in their occupational aspirations and expectations than did younger seniors; (9) Generally, vo-ag seniors were more "realistic" in occupational aspirations and expectations than nonvo-ag seniors; (10) Most seniors were negatively oriented toward their father's occupations; (11) Apparently people working in different occupations provided seniors with most occupational information upon which to base occupational decisions; (12) Apparently the high school subject having the most influence on occupational selection of seniors in the vo-ag group was vocational agriculture; whereas, science was most influential on nonvo-ag groups; (13) Interest in work was the major motivation for seniors' occupational selection; and (14) Most students made occupational selections in the 12th grade.

Specific data from this study seem to indicate that the family has varying degrees of influence upon the occupational aspirations and expectations of individuals. Family influence seems to vary proportionately with the family socioeconomic level. Family influence seems to be less among those individuals whose families are in low socioeconomic situations. On the other hand, the families seemingly exerting the most influence upon the individuals were in high socioeconomic situations. This research implies that many students (especially those from families in low socioeconomic situations) are receiving little or no occupational

guidance or encouragement from their families. These students must apparently turn to groups outside the family for guidance and help.

Students who came from relatively large rural communities (in which a relatively large number of occupations existed) were more occupationally limited in their orientation than students from small rural communities (in which only a small number of occupations existed). This condition apparently exists because students in large rural communities limit occupational selection to those available in the "home" community. However, in small rural communities students desire or are forced to look over a broader occupational horizon because of the limited number of "home" community occupations into which they might enter.

One of the strongest implications of this research is that most rural high schools seem to be falling far short of the desired degree of influence they should exert upon students who are engaged in the occupational choice process. Evidently, most students must turn to sources outside the school in order to find enough information on which to base realistic occupational decisions. Apparently there is an occupational information vacuum in many of the schools. This vacuum could be filled by occupational information supplied by educational media, resource persons, and influential occupational guidance. There seems to be a dire need for increased financial resources in most schools to fill this vacuum.

One of the most alarming facets of this study was that school personnel (counselors and teachers) apparently exert such little influence upon occupational aspirations and expectations of the students. There seems to be a tendency for school personnel to limit their guidance and influence to the educational realm rather than the occupational realm.*

8. Mississippi Evaluation Systems Project in Occupational Education. In February, 1968, Mississippi, along with Arkansas, Minnesota, and Nevada, joined Michigan in a project designed to use an "evaluation systems" approach to assess the effectiveness of local programs of vocational-technical-occupational education. Four local school systems and one junior college in Mississippi volunteered to participate in this project. Those selected were: Pascagoula City Schools, Bolivar County School District No. 4, Amory Schools, Jackson County Junior College, and Leflore County Schools.

This project was established to assist local school systems; (a) to develop and use a plan for evaluation of occupational education by utilizing local school personnel, students, local community citizens, and by drawing on supportive state department and university consultant services; (b) to aid the delineation of official and operative objectives and goals of occupational education programs in local schools, and relate these to observed outcomes; (c) to aid in explication of roles of individuals and agencies and the interactions which will lead to the identification of permanent leadership expertise and citizen participant potential;

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*See Appendix A: RCU Bibliography

and (d) to identify and delineate specific areas of the school-community developmental process which lend themselves to a research framework.

During the initial period of the project a familiarization meeting was held for local school administrators, the designated Local Leaders and Research Associates from the five selected schools. The participants arrived with varying degrees of anticipation, some of which approached outright suspicion. Questions were raised such as: "What agency is going to evaluate our schools?" and "Will our schools be compared with those in other states?" In meticulous detail it was brought out again and again during the meeting that no agency outside the local school and its community could, should, or would conduct the type of evaluative effort envisaged in this project. Evaluation strategies utilizing local staff and citizens were presented during the workshop with the constant reminder that each school would decide not only upon strategy or strategies, but upon who and how evaluation efforts would be conducted. Participants were informed as to types of outcomes of local programs which needed to be kept in mind during the project. Consultants, in the form of local school personnel who had participated in a previous evaluation project in Michigan, were used extensively in the workshop. Finally, local and state resources and agencies which could aid in evaluation were defined and described for the participants. A consensus which evolved during the workshop was that any apprehension existing in the minds of the participants at the outset was alleviated, and this resulted in overt expressions of enthusiasm for the project at the end of the three days. Following the workshop, monitoring visits were made to the schools to help in formulating local school project plans, to discuss details of evaluation strategies and procedures, to arrange and schedule needed consultative assistance, to answer questions concerning finance and reporting by the schools, and to determine the number, types and compositions of committees that had been formulated. These visits, coupled with letter correspondence and telephone conversations, indicate that much progress has been made in committee structure and planned evaluation activities of the schools.

Workshops were held for the five participating schools' personnel to provide information regarding the overall project in the spring and fall of 1968, an the spring of 1969. Contact was maintained with participating schools through monitoring visits, telephone conversations, correspondence, and visits to the RCU office by local school personnel. The final workshop under this project will be held in October, 1969.

The following are highlights of each school thus far in the project:

Amory Schools

Activities Completed -- (1) Vocational Interest Survey completed on 11th grade; (2) OVIS Interest Inventory completed on 200 students in Middle School; (3) Completed follow-up data on 1965 and 1967 classes; (4) Completed analysis of teachers' Vocational Education Information Inventory; (5) Pre-survey and Post-survey counseling of groups and individuals in senior class; (6) Completed Armed Services Vocational Aptitude

Test Battery on seniors;(7) Completed Income and Occupational Survey of parents served by school district; (8) Conducted "Career Day" in school system; (9) Vocational teachers prepared Vocational Handbook; (10) Mobility, Occupational and Educational survey completed on 1959 graduates; (11) Aptitude for Occupations Test administered to 10th and 11th grade students; (12) Administered Vocational Planning inventory to all eighth graders in the system; (13) Completed Student Occupational Survey on all high school students; (14) Completed follow-up on 1964 graduates; (15) Held joint meeting of Vocational Advisory Council and vocational staff; and (16) A bond issue was passed by a 5 to 1 margin for construction of a vocational center.

Activities Underway -- (1) An Occupational Survey of Job Opportunities in local area; (2) Local vocational teachers visiting places of employment in their fields to interview employers to strengthen course content; and (3) West Amory High School conducting follow-up study of 1965 and 1967 graduates.

Bolivar County School District No. 4

Activities Completed -- (1) The follow-up study of 1963 graduates has been completed and compiled for reporting; (2) The Occupational Opportunities Survey has been completed or is nearing completion in all areas; (3) Recommendations were made by the Citizen's Business Education Committee as follows: a) Phasing out of outmoded equipment, textbooks, etc.; b) Increased supplies of visual aids and other teaching aids; c) Providing broader ranges of office equipment for use by students; d) Redirection of some course content; e) Increased guidance; f) Providing for increased classroom space; and g) Providing for additional courses; (4) Recommendations were made by the Citizen's Home Economic Committee as follows: a) Improvement of facilities, equipment, etc,; b) Purchase of new equipment; c) Up-to-date textbooks; d) Increase purchase of visual aids and other teaching materials; e) Increase size of Home Economics staff and increase course offerings; and f) Require all girls to take one year of Home Economics; (5) Completed and analyzed Teacher Vocational Education Information Inventory; and (6) Completed OVIS Interest Inventory testing of students.

Activities Underway -- Results of the Occupational Opportunities Survey are being compiled for various committees. Committees are formulating recommendations which are to be presented to the local board of education.

Jackson County Junior College

Activities Completed -- The junior college has undergone a self-evaluation for purposes of accreditation with the Southern Association of Colleges and Secondary Schools during the 1968-69 session. Information compiled in that effort will be of value to this evaluation project. Questionnaires have been formulated and pre-tested for following up former students in the following vocational areas: (1) Electronic Technology,

(2) Drafting and Design, (3) General, (4) Academic Information Survey, (5) Health Occupations, (6) Secretarial, (7) Welding, (8) Machinist, (9) Auto Mechanics, (10) Pipe Fitting, and (11) Sheet Metal. Recommendations have been brought forth to employ a Director of Evaluation Programs and a Director of Placement Services.

Activities Underway -- Follow-up studies are being conducted on both vocational and nonvocational former students. Data are being compiled for curriculum revisions and program planning.

Leflore County School District

Follow-up studies were completed and a document was prepared which sets forth the philosophy, purpose, objectives, facilities, curriculum input, student projects and activities, inservice training of instructors, and ways of integrating the industrial arts aspect of the program with other areas of instruction. Assessment of the pilot K-6 industrial arts project which has operated for one year is nearing completion.

Pascagoula Public Schools

An Advisory Board for Vocational-Technical Education was created, having representatives from various areas of industry, education, employment service, and labor. This group met several times during the project duration, centering discussions and actions around three purposes: (1) determining the vocational needs of the community and an overview of the school system at present; (2) organizing and structuring the Advisory Board; and (3) determining needs of individual students and correlating these with community and industry needs. Some of the findings of this Board were: (1) Ingall's Shipbuilding Corporation (the largest industry in this location) employed approximately 10,300 persons and needed approximately 3,000 new ones; (2) growth in complexity of jobs called for more math, science, and English preparation, and (3) many who apply for jobs through the Employment Service cannot qualify for vacancies. A Sub-Advisory Committee was formed to explore a program that would involve industrial arts and related preparation in the 7-11th grades, with more highly focused study in the 12th grade. A follow-up study of 130 vocational education graduates of 1962 and 1966 was completed. The results showed that: (1) approximately 53% of these graduates have not moved; (2) 34% moved because of military service; (3) 16% moved to go to school (4-year college); (4) only 8% moved to take a job; (5) 38% went to a community college; (6) 41% did not continue to other schools; (7) 25% had parents in a professional, managerial, or technical occupation; (8) 38% had held two jobs; 31% had held one; and 14% had held three or more full-time jobs since graduation; (9) 36% had held a full-time job prior to graduation; (10) 70% thought they had been satisfactorily or well-prepared for employment upon graduation; (11) 83% were not self-employed; (12) 88% were employed on their first job within 35 miles of home; (13) 86% are interested in taking additional training; and (16) 54% wanted additional training in industrial-mechanics, metal-related occupations, building trades, or electrical-related jobs.

D. RCU Purpose No. 4--To disseminate research information

Information concerning vocational and technical education comes from a multitude of sources and disciplines. Frequently, the information must be interpreted for and related to local situations in the State. This purpose was met by establishing communications with numerous agencies and officials, by developing feedback channels, and by widely circulating reports and other written information.

1. One activity directed toward achieving this purpose resulted in the compilation and publication* of pertinent information concerning Mississippi's population and labor force composition and mobility. Also included in the publication were summarizations of the various vocational and technical education programs in the State. This material was compiled, published, and distributed to local school administrators, vocational educators, counselors, teachers, state supervisors, and other officials interested in vocational education in the State of Mississippi. Much additional and more up-to-date material has been accumulated for major revision of this publication.

2. The RCU frequently receives requests for information in specific areas of research. These requests are filled in a variety of ways: (a) by personal contact, (b) by direct correspondence, (c) by distribution of publications and circulars, and (d) by oral presentations concerning the services of the RCU. These oral presentations have been given to various organizations, agencies, and groups, and it is emphasized that RCU personnel are available upon request to give similar presentations in the future.

3. Elsewhere in this report was mentioned the consideration being given to a statewide data storage/retrieval system for vocational-technical information. Such a system could be used to generate periodic printouts of information which could be used for planning purposes. The system likewise would provide information which could be disseminated to a wide range of vocational-technical education audiences and interested publics, especially local school districts.

4. The Mississippi RCU has joined with about 13 states in this region to bring about the implementation of an information dissemination plan entitled "Research Coordinating Unit-Selective Document Information," or RCU/SDI. Information available through RCU/SDI would come from (a) the monthly issues of Research in Education, which is a product of the Educational Resources Information Center (ERIC); (b) DDC documents cited by the Clearinghouse for Federal Scientific and Technical Information; and (c) Occupational Education Bulletin. Audiences who will receive the product of RCU/SDI have been grouped as follows:

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*See Appendix A: RCU Bibliography

Service Areas	Related Areas
1. Agricultural Education	A. Administration and Supervision
2. Business and Office Education	B. Ancillary Service
3. Distributive Education	C. Vocational Rehabilitation
4. Guidance & Personnel	D. Research and Development
5. Health Occupations Education	E. Employment Security Agency
6. Home Economics Education	F. Advisory Council
7. Industrial (T&I) Education	G. Local School Boards
8. Industrial Arts	
9. Manpower Development	
10. Technical Education	

Roles in Each Service Area

a. Instructor Counselor
b. State Department of Education
c. Teacher Education
d. Local School Advisory Boards

It is not known at this time when the RCU/SDI system will become operable. The details of the system are available from Tennessee RCU. The Mississippi RCU has address cards punched for use in this system.

III. CONCLUSIONS AND RECOMMENDATIONS

The activities of the RCU staff were directed primarily toward determining research priorities, conducting research, and serving in various capacities to individuals and agencies who sought help in research and development activities.

The RCU was somewhat hampered throughout the early part of the period for the lack of staff to conduct its activities. The search for persons within the state who possessed both the time and capability for conducting research in occupational education has not been as fruitful as was desirable. The potential researchers in the vocational teacher-education departments have full-time teaching loads. Administrative and supervisory staff members also are overburdened with expansion activities. Though small, some progress was made in trying to get "released time" for some of these persons to do research. Likewise, some progress was made in imparting a research appreciation to vocational educators and administrators in the state; however, there remains much to be done in this area, especially among local school personnel. The "Evaluation Systems" project has made some headway here.

The Mississippi RCU employed a variety of techniques in the conduct of its activities. These included: (1) communication by holding and attending meetings, seminars and workshops, (2) the conduct of pilot projects, (3) research for curriculum revision, (4) program evaluation, (5) consultative work to other researchers and research agencies, and (6) dissemination of research information. The RCU staff provided needed leadership to implement these activities.

The following is presented as the result of the subjective re-evaluation of the Mississippi RCU and its location in the MSU Social Science Research Center. As stated before, the RCU is a major project in the SSRC program of research in OCCUPATIONAL EDUCATION AND MANPOWER DEVELOPMENT. The structure of this program is composed of three major aspects, namely: (1) Research, (2) Interpretive Communication, and (3) Graduate training.

A. Research---The conduct and coordination of research is a major and complex part of the program. RCU staff members have led the way in initiating and stimulating some research in vocational education within the state. The RCU conducted research because of the dearth of occupational research information available in the state, and, to a certain extent, to set an example for other prospective researchers. However, the RCU is not and cannot be a panacea for all vocational education problems. On the other hand, it will continue to conduct, coordinate, and stimulate research in areas which have been designated as being of top priority; namely (1) evaluation (experimental or assessment studies); (2) curriculum (approaches to curriculum revision, new and emerging curriculum

areas, etc.); and (3) development (organizational, interactional, structural studies related to change).

Implicit in the foregoing are some tentative suggestions for making vocational education research relevant to reality. By way of a summary of this portion of the research aspects of the RCU functions, some general notions will be mentioned which should be considered in future research and development programs and projects in vocational education.

Vocational education problems are complex and there exists great social concern for them, all of which places high priority on the need for carefully designed research in the behavioral sciences that relate to vocational education. This priority calls for continuing interaction and communication between administrators and educators and researchers. Their individual roles are highly complementary.

The relation of science to action may be described as a research interpretation process, which will be elaborated on in the Interpretive Communication section, but it needs to be mentioned here. The process calls for research problems to be drawn from the vocational education milieu, for theory and methodology to be brought to bear on the problems, and for the resultant findings to be interpreted and applied through action programs. The process of interpretation is of critical importance because it involves both translation of action concerns into research problems, and translation of research findings into action strategies.

1. Research Assumptions. Several assumptions seem appropriate to research needs in vocational education. One assumption is that the area of vocational education comprises multi-factor problems which require multi-factor solutions. Research must consider the configurational aspects of the environment needing change. Identification must be made of multi-dimensional types of individuals rather than concentrate on single-factor definitions and unidimensional models. This bit of philosophy seems to be manifest in the Vocational Amendments of 1968. An illustrative example of the unidimensional approach is where curriculum planning is based only on a simple job census and job projection survey. Another is where area vocational complexes are erected solely on the criterion that money happened to be available for construction.

A second assumption is that priority should be given to implementing depth and longitudinally designed studies as opposed to superficial, one-time surveys. Favored most are organized programs of research with coordination of many specific projects conducted simultaneously over time. This would seem to be a basic aim of most of the RCU's, but especially of the Mississippi RCU.

A final assumption is that inductive and deductive processes--both empirical generalization and articulation of applicable theory--are relevant in research design. Too often we confuse the deductive process

with the tendency to plan and justify programs based on intuition or tradition, and to evaluate in terms of what we feel we can do rather than in terms of what we actually have done, or in terms of how our products behave after they exist from our programs.

2. Mobility Studies Related to Vocational Education. Vocational education seeks to help people adapt to change, to develop their social and economic mobility potential. Studies are needed to determine the process through which general skills are acquired. Research is needed on the relevance of vocational and technical education programs to the needs and potentials of those it seeks to serve. The importance of vocational education as a channel of mobility should be examined through longitudinal, panel-type studies. Some studies of this type are being conducted. But what are needed are the types that begin with preschool experience and conduct interviews during the primary, junior high, and senior high years, and follow-up after graduation and/or drop-out. Such studies would yield data concerning the effects of vocational education on the development of occupational and other aspirations, and the processes by which adaptation was made, as well as the extent to which aspirations were attained. Studies of this type are viewed as part of a continuing program of evaluation.

Mobility studies are especially needed in vocational education programs which are designed to serve persons who fall into one of the categories used to describe the disadvantaged. From the community standpoint, studies are needed for classification of areas in terms of mobility channels and rates, shape and rigidity of class structures, and nature and effectiveness of community action structures as they relate to vocational educational programs. Individuals and families need to be classified in terms of their mobility potential and propensity. For example, research is needed to determine the proportion of a disadvantaged population for whom organic or functional deficiencies prevent mobility, the proportion who are able but lack motivation, and the proportion who are motivated to achieve but lack opportunities. Following such research, curriculums could be designed to meet need differentials of the various groups.

Mobility studies are needed which deal comprehensively with the quality, as well as the quantity of formal participation in organizations of different kinds of workers, and the extent to which vocational education contributes to such participation. Research is needed to specify possible differentials in kinds of membership organizations, work and work-related groups, and their relation to mobility channels, depths of involvement in organizations, and the structure of membership organizations in terms of leadership, role differentiation, and program. Participation is an important expression of social rank and a useful indicator of mobility potential.

Finally, it would seem that most any type of research effort that relates vocational education to community-wide research and development actions would fit into the overall strategies that are designed

to bring about change. The implications of this part of the report, then, have been that change can be brought about by ever greater quality of interaction.

B. Interpretive Communication--Interaction between persons facilitates the exchange of ideas. Researchers must interact with practitioners in order to communicate research results and to get "feedback" upon which "problem-oriented" research studies can be based. Put somewhat differently research results must be translated by researchers and interpreted by practitioners in terms of action sequences which ultimately will lead to progress in educational program development. To facilitate such interpretive communication for this program, the following techniques were used: (1) workshops, seminars, conferences, short-courses held as the needs arise; (2) use of off-campus consultants and lecturers; and (3) extensive use of advisory committees of various types.

These types of communication activities require specially trained personnel, persons with knowledge about kinds of mechanisms designed to bring about planned educational change. Such mechanisms thus far, are not very clear as to form, but the consensus is that they must include as essential components: (1) staff involvement in inventing and/or selecting innovations, (2) evaluation of present programs and of proposed innovations, and (3) provision for continual innovation. The need for persons who can operate in such a context is self-evident. The demand for their services will be continuous over a long foreseeable future, and the acute shortage of such persons in Mississippi presents us with out most pressing problem.

C. Graduate Training---Good education does not occur solely through the use of tricks and tools, but through well-prepared teachers and other education personnel. It is estimated that such innovations as computerized classrooms are almost here; but the most pressing current problem is that teachers and schools just are not changing fast enough, and technology is changing too fast. To get teachers and schools to change will require experts in educational change, which might also be termed the innovation process. It is axiomatic that no worthwhile program that is designed to bring about change and/or innovation in education can be developed in isolation. A program's developmental matrix is composed of numerous determinants, each of which varies in intensity and in direction at different points of time. To study one aspect of education to the complete exclusion of others merely contributes to an already growing trend toward "compartmentalization," "fragmentation," etc. Likewise, to study education to the exclusion of other social, economic, and political realities simply contributes to a closed body of "isolated ignorance." To offset trends, the program of Behavioral Studies in Occupational Education and Manpower Development will approach the problems involved in innovation in education with special reference to an interdisciplinary base. This will require that cooperative relationships be maintained with many different agencies in and outside the state.

The RCU will continue to identify and encourage persons in the state who are interested in pursuing graduate degrees in vocational education, and to inform them of graduate programs and internships that are available at various institutions and the national vocational-technical education centers.

IV. APPENDIX

A. RCU Bibliography--The following are items which: (1) were produced by the RCU staff; (2) were commissioned or sponsored by the RCU; or (3) the RCU rendered some form of assistance in compiling:

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Research Coordinating Unit (RCU) for Vocational-Technical Education

B. FUNCTIONS OF THE RCU: What it is; What it does; How it works; Who it serves

You may have heard of the RCU before, but we want to tell how the RCU might serve you and your co-workers. Vocational and Technical Education in Mississippi is improving existing programs and implementing new ones in occupational training. Its prime aim is to prepare people for the world of work. Achieving this aim involves the acquisition of work skills, sociological skills, and personality skills. Problems involved are many and complex and their solutions demand the most reliable data for planning. Such data can only be secured through planned research processes; hence, the establishment of the Mississippi RCU.

WHAT IT IS: The RCU is a project jointly sponsored by the Mississippi State Division of Vocational and Technical Education and the Social Science Research Center of Mississippi State University. Part of the funds are provided by the U.S. Office of Education. There are RCU's in 45 other states. The Mississippi RCU has a staff with research competence in vocational-technical-occupational education. It is housed in Room 13, Montgomery Hall, MSU campus.

WHAT IT DOES: The functions of the RCU can best be described with the acronym: SCID. Its functions are to STIMULATE, COORDINATE, IMPLEMENT, DISSEMINATE. It stimulates persons in the state to conduct research in Occupational Education and closely related disciplines. It coordinates these types of research activities within the state to avoid overlap and duplication, and to replicate where necessary. It implements research projects that are directed by members of the RCU staff. It disseminates research information that is obtained in the state, region, and nation.

HOW IT WORKS: Some activities of the RCU are as follows: (1) it identifies research and development needs with the assistance of advisory committees and individuals; (2) it provides assistance and encouragement upon request in planning and conducting research; (3) it lends assistance in evaluation of programs; (4) it develops and disseminates occupational research information; (5) it develops and conducts research training workshops; (6) it maintains and encourages interaction on interagency and interdisciplinary bases, and (7) it maintains close contact with various teacher education departments by teaching courses, serving on graduate committees, and providing research assistantships for promising graduate students.

WHO IT SERVES: The RCU serves individuals, agencies, and/or entities of: (1) Local schools: municipal and county districts; (2) Junior colleges: municipal and/or community colleges and their districts;

(3) Colleges and universities; (4) Local and state educational units; and (5) Other organizations which might benefit from its services. The RCU also has research assistantships available to persons who wish to pursue graduate studies in vocational-technical-occupational education.

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